

Use Attainability Analysis

for

WBID 0922 Little Blackwater Creek

Submitted by
SES, Inc.

to

Missouri Department of Natural Resources
Water Protection Program

Date received: November 14, 2007

Field Data Sheets for Recreation Use Stream Surveys

Data Sheet A - Water Body Identification

I. Water Body Information (For water body being surveyed)

Water Body Name (from USGS 7.5' quad):	L. Blackwater Creek		
Missouri Water Body Identification (WBID) Number:	922		
8 digit HUC code:	10290108	County:	Johnson
Upstream Legal Description (from Table H):	T47N	R28W	Sec 36
Downstream Legal Description (from Table H):	T46N	R27W	Sec 17
Number of sites evaluated:	4		
List all site numbers, listed consequently upstream to downstream:	1, 2, 3, 4		

Site Locations Map(s): Attach a map of the entire segment with assessment sites clearly labeled.
Mark any other items that may be of interest.

II. Facility Information (list all permitted discharges to the water body segment)

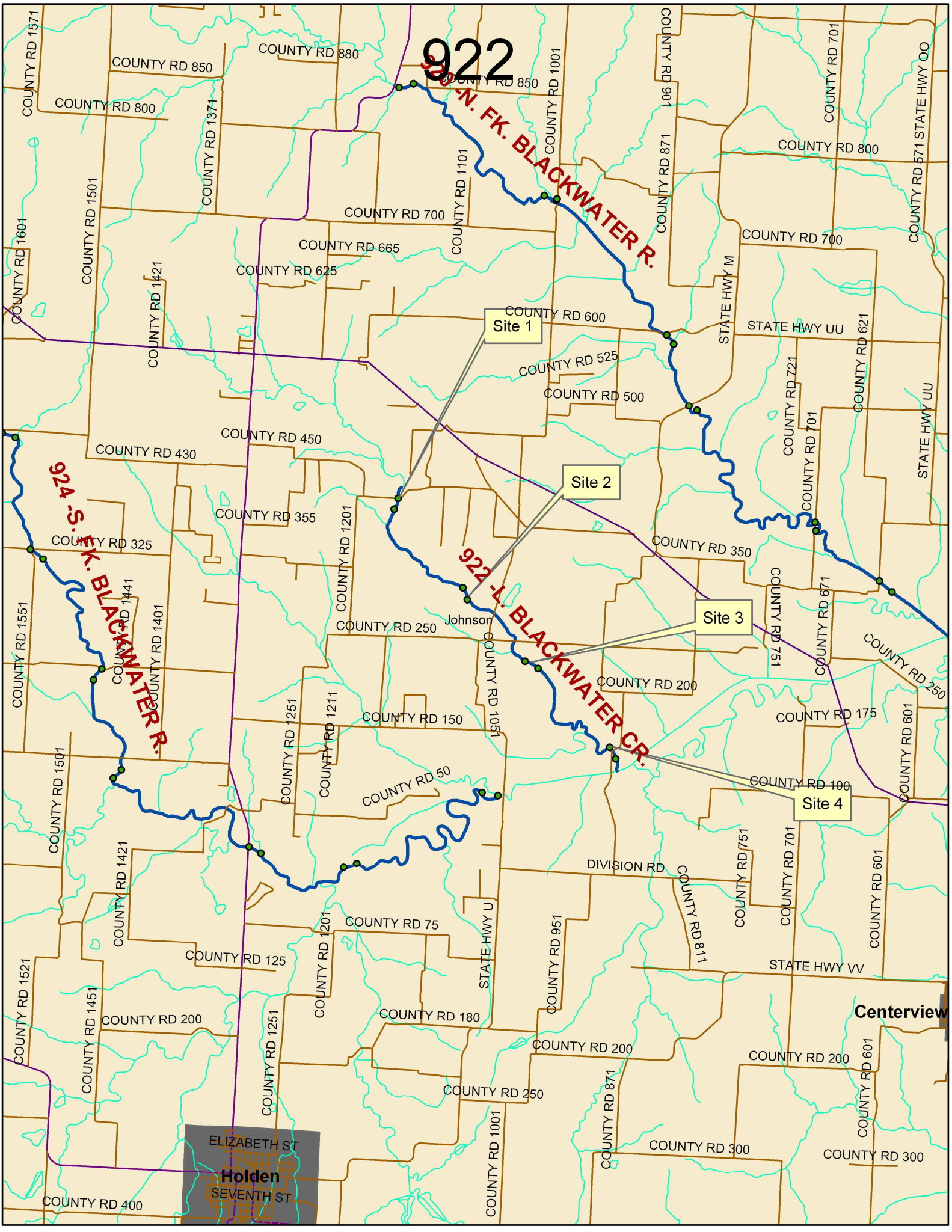
Facility Name(s) and Permit Number(s):
Maplewood Estates WWTF
MO0127167

III. UAA Surveyor (please print legibly)

Name of Surveyor:	Gilisa Gould	Telephone Number:	913.307.0054
Organization/Employer:	SES, Inc.		

Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.

Signed: gilisa gould **Date:** 11.06.07



WBID # 922
 Site # 1

Field Data Sheets For Recreational Use Stream Surveys

Data Sheet B-Site Characterization

Date & Time: 10.30.07	14:40	Site Location Description (e.g. road crossing):
Personnel: Gilisa Gould and Larissa Brown		CR 400
Current Weather Conditions: clear		Facility Name: Maplewood Estates WWTF
Weather conditions for the past 10 days: 0.56 inches		Permit Number: MO0127167
Drought conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>		

Site Location:

Location Coordinates (Universal Transverse Mercator Projection, In Meters)					
Site 01	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy:	Meters	
	0416652	4298072		7.3	
Site 11	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy:	Meters	
	0416577	4297889		5.4	

Photos:

Photo ID#	Photo Purpose	Photo ID#:	Photo Purpose	Photo ID#:	Photo Purpose
211	upstream, T1	212	downstream, T1	213	downstream, T11
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
214	upstream, T11				
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

Uses Observed:

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water Skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe:				

WBID # 922
Site # 1

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B- Site Characterization (Continued)

Surrounding Conditions:

<input type="checkbox"/> City/County parks	<input type="checkbox"/> playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National Forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkways
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> Fence	<input checked="" type="checkbox"/> No trespass sign	<input type="checkbox"/> Steep Slopes	<input type="checkbox"/> Other:
Comments: none				

Evidence of Human Use:

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot path/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV/ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock watering
comments/other: none				

Substrate:

% Cobble 20	% Gravel 30	% Sand 30	% Silt	% Mud/Clay 20	% Bedrock
----------------	----------------	--------------	--------	------------------	-----------

Aquatic Vegetation:

on banks

Water Characteristics:

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input checked="" type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input type="checkbox"/> Fine sediments	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

WBID # 922
Site # 1

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization (continued)

Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

Comments: (Please record any additional comments here.)

none

Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.

Surveyor's Signature: gilisa gould Date of Survey: 10.30.07

Organization: SES, Inc. Position: field team leader

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Waterbody ID: <u>922</u> Site #: <u>1</u> Estimated Channel Incision: <u>1.0</u> (m) (height between low bank width and water) GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM) 01 UTM X: <u>0416652</u> UTM Y: <u>4298072</u> +/- <u>7.3</u> (meters) 11 UTM X: <u>0416577</u> UTM Y: <u>4297889</u> +/- <u>5.4</u> (meters) Average Stream Width: <u>6</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>Gilisa Gould and Larissa Brown</u>	Dissolved Oxygen Date: <u>10.30.07</u> Time: <u>14:40</u> Dissolved Oxygen: <u>9.6</u> (mg/L) Dissolved Oxygen: _____ (% sat) Specific Cond: _____ (µS/cm) Water Temperature: <u>16.2</u> (°C)
--	--

Station	Transect Cross-Section																					
	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.2	0.01	0.7	0.10	0.6	0.40	0.4	0.01	0.5	0.01	0.7	0.20	0.4	0.05	0.5	0.01	0.3	0.05	0.5	0.05	0.3	0.01
2	0.4	0.05	1.4	0.35	1.2	0.80	0.8	0.01	1.0	0.15	1.4	0.45	0.8	0.20	1.0	0.05	0.6	0.05	1.0	0.05	0.6	0.01
3	0.6	0.10	2.1	0.40	1.8	0.70	1.2	0.10	1.5	0.20	2.1	0.50	1.2	0.20	1.5	0.10	0.9	0.15	1.5	0.10	0.9	0.00
4	0.8	0.10	2.8	0.45	2.4	0.60	1.6	0.10	2.0	0.30	2.8	0.45	1.6	0.15	2.0	0.15	1.2	0.15	2.0	0.05	1.2	0.00
5	1.0	0.10	3.5	0.20	3.0	0.50	2.0	0.20	2.5	0.40	3.5	0.45	2.0	0.05	2.5	0.05	1.5	0.15	2.5	0.01	1.5	0.01
6	1.2	0.10	4.2	0.10	3.6	0.35	2.4	0.20	3.0	0.40	4.2	0.45	2.4	0.05	3.0	0.05	1.8	0.05	3.0	0.05	1.8	0.00
7	1.4	0.05	4.9	0.30	4.2	0.20	2.8	0.20	3.5	0.25	4.9	0.45	2.8	0.05	3.5	0.05	2.1	0.05	3.5	0.00	2.1	0.05
8	1.6	0.05	5.6	0.50	4.8	0.15	3.2	0.25	4.0	0.15	5.6	0.40	3.2	0.05	4.0	0.05	2.4	0.01	4.0	0.05	2.4	0.05
9	1.8	0.01	6.3	0.20	5.4	0.05	3.6	0.10	4.5	0.05	6.3	0.30	3.6	0.01	4.5	0.01	2.7	0.01	4.5	0.01	2.7	0.01
Right Bank	2.0	0.00	7.0	0.00	6.0	0.00	4.0	0.00	5.0	0.00	7.0	0.00	4.0	0.00	5.0	0.00	3.0	0.00	5.0	0.00	3.0	0.00
Feature Type (riffle, run, or pool)	pool		pool		pool		pool		pool		pool		pool		pool		pool		pool		riffle	

(riffle, run, or pool)

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Signed: gilisa gould Date: 11.06.07

WBID # 922
 Site # 2

Field Data Sheets For Recreational Use Stream Surveys

Data Sheet B-Site Characterization

Date & Time: 10.30.07	13:50	Site Location Description (e.g. road crossing):
Personnel: Gilisa Gould and Larissa Brown		CR 1051
Current Weather Conditions: clear		Facility Name: Maplewood Estates WWTF
Weather conditions for the past 10 days: 0.56 inches		Permit Number: MO0127167
Drought conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>		

Site Location:

Location Coordinates (Universal Transverse Mercator Projection, In Meters)					
Site 01	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy:	Meters	
	0417808	4296480		6.0	
Site 11	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy:	Meters	
	0417888	4296266		8.2	

Photos:

Photo ID#	Photo Purpose	Photo ID#:	Photo Purpose	Photo ID#:	Photo Purpose
207	upstream, T1	208	downstream, T1	209	upstream, T11
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
210	downstream, T11				
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

Uses Observed:

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water Skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe:				

WBID # 922
Site # 2

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B- Site Characterization (Continued)

Surrounding Conditions:

<input type="checkbox"/> City/County parks	<input type="checkbox"/> playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National Forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkways
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Steep Slopes	<input type="checkbox"/> Other:
Comments: none				

Evidence of Human Use:

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot path/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV/ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock watering
comments/other: none				

Substrate:

% Cobble	% Gravel	% Sand	% Silt	% Mud/Clay	% Bedrock
10	30	30		30	

Aquatic Vegetation:

along banks

Water Characteristics:

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input checked="" type="checkbox"/> Other:
					brown
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input checked="" type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input type="checkbox"/> None	<input type="checkbox"/> Other:

WBID # 922
Site # 2

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization (continued)

Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

Comments: (Please record any additional comments here.)

none

Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.

Surveyor's Signature: gilisa gould Date of Survey: 10.30.07

Organization: SES, Inc. Position: field team leader

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Waterbody ID: <u>922</u> Site #: <u>2</u> Estimated Channel Incision: <u>2.0</u> (m) (height between low bank width and water) GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM) 01 UTM X: <u>0417808</u> UTM Y: <u>4296480</u> +/- <u>6.0</u> (meters) 11 UTM X: <u>0417888</u> UTM Y: <u>4296266</u> +/- <u>8.2</u> (meters) Average Stream Width: <u>8</u> (meters) Length of Survey Segment: <u>160</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>Gilisa Gould and Larissa Brown</u>	Dissolved Oxygen Date: <u>10.30.07</u> Time: <u>13:50</u> Dissolved Oxygen: <u>4.5</u> (mg/L) Dissolved Oxygen: _____ (% sat) Specific Cond: _____ (µS/cm) Water Temperature: <u>16.1</u> (°C)
--	--

Station	Transect Cross-Section																					
	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.8	0.25	0.7	0.10	0.7	0.10	0.8	0.15	0.7	0.10	0.7	0.10	0.8	0.10	0.4	0.01	0.7	0.25	0.8	0.05	0.7	0.05
2	1.6	0.50	1.4	0.20	1.4	0.30	1.6	0.30	1.4	0.50	1.4	0.15	1.6	0.20	0.8	0.05	1.4	0.55	1.6	0.30	1.4	0.10
3	2.4	0.80	2.1	0.40	2.1	0.50	2.4	0.40	2.1	0.80	2.1	0.30	2.4	0.30	1.2	0.10	2.1	0.75	2.4	0.40	2.1	0.35
4	3.2	1.00	2.8	0.60	2.8	0.70	3.2	0.30	2.8	0.70	2.8	0.50	3.2	0.85	1.6	0.10	2.8	1.00	3.2	0.40	2.8	0.55
5	4.0	1.00	3.5	0.75	3.5	0.80	4.0	0.25	3.5	0.70	3.5	0.70	4.0	0.95	2.0	0.10	3.5	1.00	4.0	0.50	3.5	0.65
6	4.8	0.60	4.2	0.80	4.2	0.80	4.8	0.20	4.2	0.60	4.2	0.55	4.8	0.75	2.4	0.10	4.2	1.00	4.8	0.55	4.2	0.60
7	5.6	0.40	4.9	0.60	4.9	0.40	5.6	0.30	4.9	0.40	4.9	0.30	5.6	0.55	2.8	0.05	4.9	0.95	5.6	0.60	4.9	0.45
8	6.4	0.25	5.6	0.20	5.6	0.20	6.4	0.20	5.6	0.20	5.6	0.15	6.4	0.40	3.2	0.05	5.6	0.60	6.4	0.40	5.6	0.20
9	7.2	0.05	6.3	0.05	6.3	0.10	7.2	0.10	6.3	0.10	6.3	0.05	7.2	0.05	3.6	0.01	6.3	0.45	7.2	0.20	6.3	0.05
Right Bank	8.0	0.00	7.0	0.00	7.0	0.00	8.0	0.00	7.0	0.00	7.0	0.00	8.0	0.00	4.0	0.00	7.0	0.00	8.0	0.00	7.0	0.00
Feature Type (rifle, run, or pool)	pool		pool		pool		pool		pool		pool		pool		pool		pool		pool		pool	

(riffle, run, or pool)

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Signed: gilisa gould Date: 11.06.07

WBID # 922
 Site # 3

Field Data Sheets For Recreational Use Stream Surveys

Data Sheet B-Site Characterization

Date & Time: 10.30.07 12:50	Site Location Description (e.g. road crossing):
Personnel: Gilisa Gould and Larissa Brown	CR 250
Current Weather Conditions: clear	Facility Name: Maplewood Estates WWTF
Weather conditions for the past 10 days: 0.56 inches	Permit Number: MO0127167
Drought conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Location:

Location Coordinates (Universal Transverse Mercator Projection, In Meters)					
Site 01	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy:		Meters
	0418924	4295158			6.0
Site 11	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy:		Meters
	0419150	4295033			7.6

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
202	downstream, T11	203	upstream, T11	204	road crossing stream
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
205	downstream, T1	206	upstream, T1		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

Uses Observed:

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water Skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe:				

WBID # 922
Site # 3

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B- Site Characterization (Continued)

Surrounding Conditions:

<input type="checkbox"/> City/County parks	<input type="checkbox"/> playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National Forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkways
<input type="checkbox"/> Boating accesses	<input checked="" type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Steep Slopes	<input type="checkbox"/> Other:
Comments: none				

Evidence of Human Use:

<input checked="" type="checkbox"/> Roads	<input type="checkbox"/> Foot path/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV/ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock watering
comments/other: none				

Substrate:

% Cobble 30	% Gravel 30	% Sand 20	% Silt	% Mud/Clay 20	% Bedrock
----------------	----------------	--------------	--------	------------------	-----------

Aquatic Vegetation:

along banks

Water Characteristics:

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input checked="" type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

WBID # 922
Site # 3

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization (continued)

Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

Comments: (Please record any additional comments here.)

none

Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.

Surveyor's Signature: gilisa gould Date of Survey: 10.30.07

Organization: SES, Inc. Position: field team leader

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Waterbody ID: <u>922</u> Site #: <u>3</u> Estimated Channel Incision: <u>3.0</u> (m) (height between low bank width and water) GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM) 01 UTM X: <u>0418924</u> UTM Y: <u>4295158</u> +/- <u>6.0</u> (meters) 11 UTM X: <u>0419150</u> UTM Y: <u>4295033</u> +/- <u>7.6</u> (meters) Average Stream Width: <u>7</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>Gilisa Gould and Larissa Brown</u>	Dissolved Oxygen Date: <u>10.30.07</u> Time: <u>12:50</u> Dissolved Oxygen: <u>10.8</u> (mg/L) Dissolved Oxygen: _____ (% sat) Specific Cond: _____ (µS/cm) Water Temperature: <u>21.3</u> (°C)
--	---

Station	Transect Cross-Section																					
	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.6	0.01	0.9	0.20	0.8	0.25	0.6	0.01	0.7	0.01	0.6	0.20	0.3	0.15	0.1	0.01	0.1	0.05	0.3	0.01	0.7	0.05
2	1.2	0.05	1.8	0.45	1.6	0.65	1.2	0.05	1.4	0.05	1.2	0.40	0.6	0.20	0.2	0.01	0.2	0.05	0.6	0.10	1.4	0.15
3	1.8	0.05	2.7	0.30	2.4	0.85	1.8	0.00	2.1	0.10	1.8	0.50	0.9	0.20	0.3	0.05	0.3	0.05	0.9	0.05	2.1	0.25
4	2.4	0.01	3.6	0.00	3.2	1.00	2.4	0.01	2.8	0.01	2.4	0.65	1.2	0.30	0.4	0.05	0.4	0.10	1.2	0.20	2.8	0.30
5	3.0	0.00	4.5	0.00	4.0	1.00	3.0	0.35	3.5	0.00	3.0	0.70	1.5	0.25	0.5	0.01	0.5	0.10	1.5	0.15	3.5	0.25
6	3.6	0.05	5.4	0.00	4.8	1.00	3.6	0.15	4.2	0.01	3.6	0.60	1.8	0.20	0.6	0.01	0.6	0.05	1.8	0.15	4.2	0.15
7	4.2	0.00	6.3	0.10	5.6	0.55	4.2	0.01	4.9	0.01	4.2	0.50	2.1	0.15	0.7	0.05	0.7	0.05	2.1	0.15	4.9	0.05
8	4.8	0.01	7.2	0.10	6.4	0.25	4.8	0.05	5.6	0.01	4.8	0.30	2.4	0.10	0.8	0.01	0.8	0.05	2.4	0.05	5.6	0.01
9	5.4	0.01	8.1	0.05	7.2	0.05	5.4	0.01	6.3	0.05	5.4	0.15	2.7	0.05	0.9	0.01	0.9	0.01	2.7	0.05	6.3	0.01
Right Bank	6.0	0.00	9.0	0.00	8.0	0.00	6.0	0.00	7.0	0.00	6.0	0.00	3.0	0.00	1.0	0.00	1.0	0.00	3.0	0.00	7.0	0.00
Feature Type <small>(riffle, run, or pool)</small>	riffle		pool		pool		pool		riffle		pool		pool		pool		pool		pool		pool	

(riffle, run, or pool)

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Signed: gilisa gould Date: 11.06.07

WBID # 922
 Site # 4

Field Data Sheets For Recreational Use Stream Surveys

Data Sheet B-Site Characterization

Date & Time: 10.30.07	11:40	Site Location Description (e.g. road crossing):
Personnel: Gilisa Gould and Larissa Brown		CR 901
Current Weather Conditions: clear		Facility Name: Maplewood Estates WWTF
Weather conditions for the past 10 days: 0.56 inches		Permit Number: MO0127167
Drought conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>		

Site Location:

Location Coordinates (Universal Transverse Mercator Projection, In Meters)					
Site 01	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy:	Meters	
	0420438	4293612		6.0	
Site 11	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy:	Meters	
	0420459	4293408		4.5	

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
198	downstream, T11	199	upstream, T11	200	downstream, T1
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
201	upstream, T11				
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

Uses Observed:

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water Skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe:				

WBID # 922
Site # 4

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B- Site Characterization (Continued)

Surrounding Conditions:

<input type="checkbox"/> City/County parks	<input type="checkbox"/> playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National Forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkways
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Steep Slopes	<input type="checkbox"/> Other:
Comments: none				

Evidence of Human Use:

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot path/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV/ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock watering
comments/other: none				

Substrate:

% Cobble 20	% Gravel 30	% Sand 30	% Silt	% Mud/Clay 20	% Bedrock
----------------	----------------	--------------	--------	------------------	-----------

Aquatic Vegetation:

none

Water Characteristics:

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input checked="" type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

WBID # 922
Site # 4

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization (continued)

Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

Comments: (Please record any additional comments here.)

none

Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.

Surveyor's Signature: gilisa gould Date of Survey: 10.30.07

Organization: SES, Inc. Position: field team leader

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Waterbody ID: <u>922</u> Site #: <u>4</u>															Dissolved Oxygen				
Estimated Channel Incision: <u>4.0</u> (m) (height between low bank width and water)															Date: <u>10.30.07</u> Time: <u>11:40</u>				
GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM)															Dissolved Oxygen: <u>7.1</u> (mg/L)				
01 UTM X: <u>0420438</u> UTM Y: <u>4293612</u> +/- <u>6.0</u> (meters)															Dissolved Oxygen: _____ (% sat)				
11 UTM X: <u>0420459</u> UTM Y: <u>4293408</u> +/- <u>4.5</u> (meters)															Specific Cond: _____ (µS/cm)				
Average Stream Width: <u>6</u> (meters) Length of Survey Segment: <u>150</u> (meters)															Water Temperature: <u>15.2</u> (°C)				
(To determine Length of Reach) (20x average stream width)																			
Field Staff: <u>Gilisa Gould and Larissa Brown</u>																			

Station	Transect Cross-Section																					
	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.7	0.05	0.6	0.01	0.6	0.01	0.7	0.01	0.4	0.01	0.5	0.01	0.5	0.05	0.3	0.10	0.5	0.05	0.6	0.05	0.6	0.01
2	1.4	0.25	1.2	0.05	1.2	0.05	1.4	0.06	0.8	0.01	1.0	0.05	1.0	0.10	0.6	0.20	1.0	0.01	1.2	0.10	1.2	0.01
3	2.1	0.40	1.8	0.01	1.8	0.10	2.1	0.05	1.2	0.05	1.5	0.05	1.5	0.10	0.9	0.20	1.5	0.05	1.8	0.15	1.8	0.00
4	2.8	0.40	2.4	0.05	2.4	0.10	2.8	0.10	1.6	0.05	2.0	0.05	2.0	0.15	1.2	0.20	2.0	0.05	2.4	0.20	2.4	0.05
5	3.5	0.40	3.0	0.10	3.0	0.10	3.5	0.15	2.0	0.05	2.5	0.10	2.5	0.05	1.5	0.20	2.5	0.00	3.0	0.15	3.0	0.10
6	4.2	0.40	3.6	0.10	3.6	0.05	4.2	0.05	2.4	0.01	3.0	0.15	3.0	0.05	1.8	0.20	3.0	0.05	3.6	0.15	3.6	0.01
7	4.9	0.30	4.2	0.10	4.2	0.05	4.9	0.00	2.8	0.01	3.5	0.10	3.5	0.00	2.1	0.15	3.5	0.00	4.2	0.10	4.2	0.05
8	5.6	0.20	4.8	0.10	4.8	0.01	5.6	0.01	3.2	0.01	4.0	0.00	4.0	0.01	2.4	0.10	4.0	0.01	4.8	0.05	4.8	0.05
9	6.3	0.10	5.4	0.05	5.4	0.01	6.3	0.01	3.6	0.01	4.5	0.01	4.5	0.01	2.7	0.05	4.5	0.01	5.4	0.05	5.4	0.01
Right Bank	7.0	0.00	6.0	0.00	6.0	0.00	7.0	0.00	4.0	0.00	5.0	0.00	5.0	0.00	3.0	0.00	5.0	0.00	6.0	0.00	6.0	0.00
Feature Type <small>(riffle, run, or pool)</small>	pool		pool		pool		pool		riffle		riffle		riffle		pool		riffle		pool		riffle	

(riffle, run, or pool)

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Signed: gilisa gould Date: 11.06.07

WBID# 0922 Little Blackwater Creek



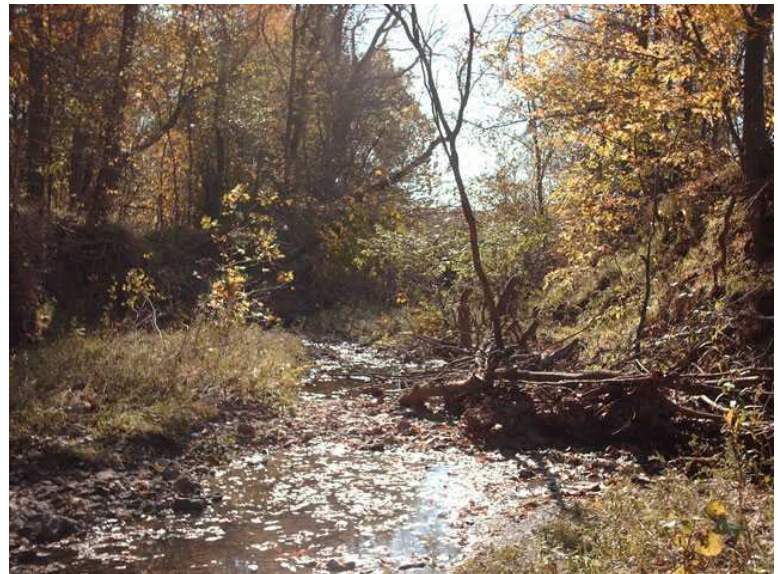
Site# 1 Photo ID# 211, Upstream, T1



Site# 1 Photo ID# 212, Downstream, T1

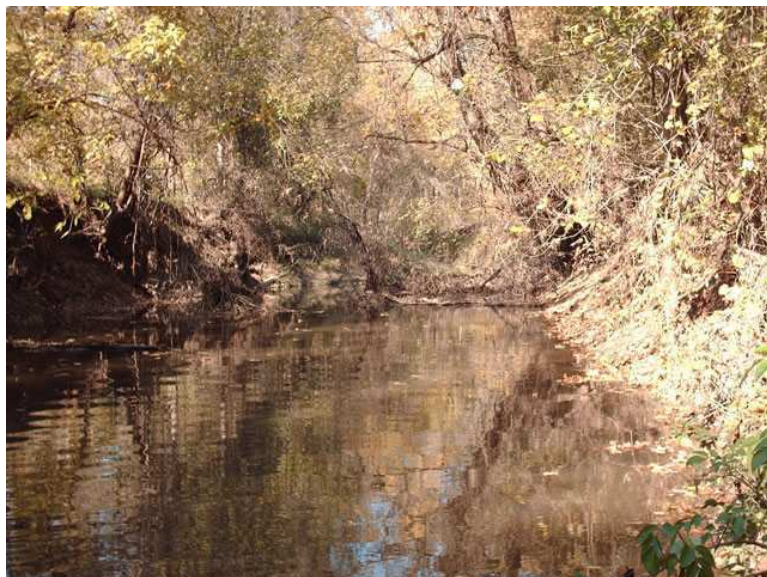


Site# 1 Photo ID# 214, Upstream, T 11

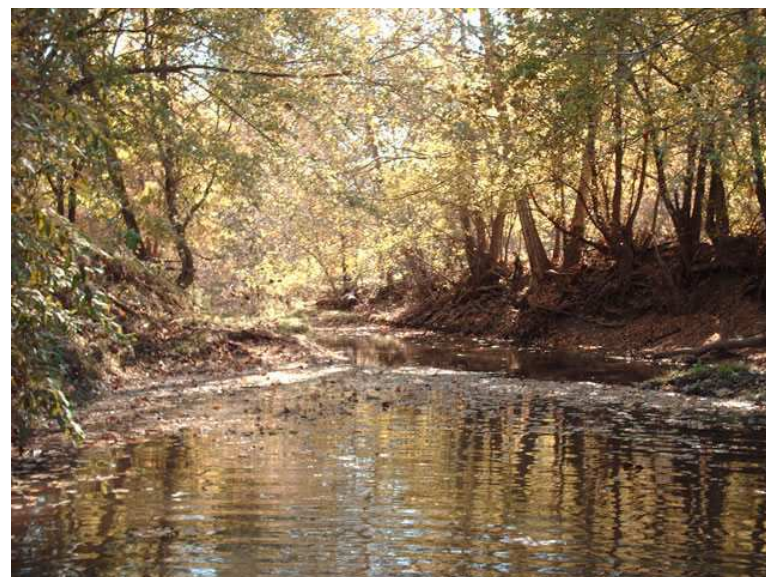


Site# 1 Photo ID# 213, Downstream, T 11

WBID# 0922 Little Blackwater Creek



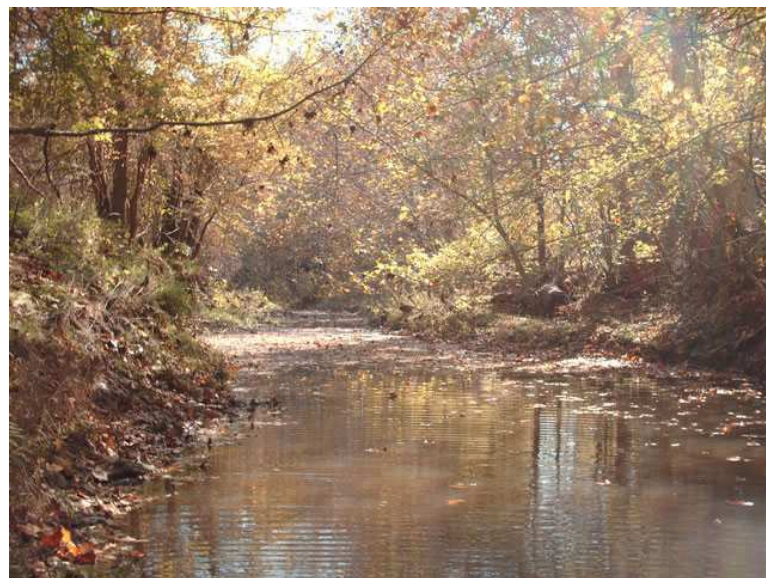
Site# 2 Photo ID# 207, Upstream, T1



Site# 2 Photo ID# 208, Downstream, T1



Site# 2 Photo ID# 209, Upstream, T 11



Site# 2 Photo ID# 210, Downstream, T 11

WBID# 0922 Little Blackwater Creek



Site# 3 Photo ID# 204, Road crossing



Site# 3 Photo ID# 205, Downstream, T1

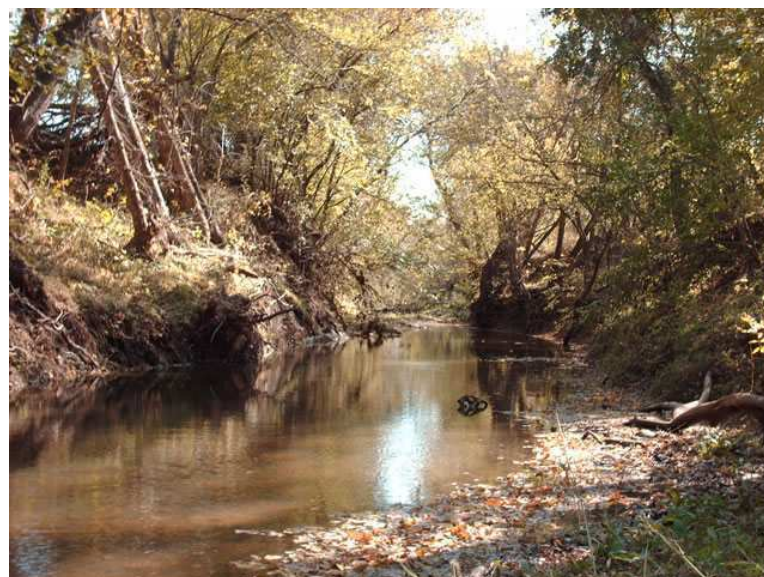


Site# 3 Photo ID# 206, Downstream, T 1

WBID# 0922 Little Blackwater Creek



Site# 3 Photo ID# 203, Upstream, T11



Site# 3 Photo ID# 202, Downstream, T11



Site# 4 Photo ID# 199, Upstream, T 11



Site# 4 Photo ID# 198, Downstream, T 11

WBID# 0922 Little Blackwater Creek



Site# 4 Photo ID# 201, Upstream, T1



Site# 4 Photo ID# 200, Downstream, T1